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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PPD 70175WO		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/14248	International filing date (day/month/year) 15.12.2003	Priority date (day/month/year) 24.12.2002	
International Patent Classification (IPC) or both national classification and IPC C07D231/14			
Applicant SYNGENTA PARTICIPATIONS AG et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 48 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  15.06.2004		Date of completion of this report  30.05.2005	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Helps, I  Telephone No. +49 89 2399-8209	



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/14248

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, Pages

1-9, 17, 18, 21-23, 30-32, 39, 40, 43, 44, 54, 57, 64-70, 75, 79-92	as originally filed
10-16, 19-20, 24-29, 33-38, 41-42, 45-53, 55-56, 58-63, 71-74, 76-78	received on 15.09.2004 with letter of 01.09.2004

### Claims, Numbers

2-12	as originally filed
1	filed with telefax on 29.11.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-8,11,12
	No: Claims	9,10
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**V. CITATIONS AND EXPLANATIONS**

The following documents are mentioned in this report.

JP-A-2001 302605	(A)
US-A-3,928,364	(B)
US-A-4,036,989	(C)
US-A-4,016,214	(D)
DE-A-2,205,732	(E)
Tetrahedron Letters, vol.32, p.2761-4 (1976)	(F)
Arzneimittel Forschung, vol.38, p.1454-60 (1988)	(G)
Journal of Organic Chemistry, vol.42, p.1780-3 (1977)	(H)
Journal of the American Chemical Society, vol.68, p.1159-61 (1946)	(I)
European Journal of Medicinal Chemistry, vol.22, p.45-57 (1987)	(J)
WO-A-02 08197	(K)
DE-A-102 15 292	(L)
DE-A-102 04 391	(M)
DE-A-102 04 390	(N)
DE-A-102 18 231	(O)

Document (E) discloses a number of biphenyl butenoic acid compounds which do not fall under the scope of the disclaimers. Example 4 is novelty destroying for claim 9 in which R1 is acetyl and R7 is CH=CH-CH<sub>2</sub>COOH. Example 6 is novelty destroying for claim 10 in which Hal is fluorine and R7 is CH=CHCH<sub>2</sub>COOH. Examples 13 and 41 are novelty destroying for claim 10 in which R7 is CH=CH-CH<sub>2</sub>COOEt and Hal is fluorine.

Document (F) discloses 2-biphenyl-pentafluoropropene substituted at the 2'-position by chloro or bromine (see table, ortho substituted products). these compounds are novelty destroying for claim 10 in which R7 is pentafluoropropene and Hal is chlorine or fluorine.

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Document (G) discloses some biphenylalkenoic acid derivatives substituted by chlorine. Example 1a falls under the scope of claim 10 in which R7 is  $\text{CH}=\text{CH}-\text{CH}(\text{CH}_3)\text{COOH}$ .

Document (J) discloses some biphenylalkenoic acids bearing chlorine groups at the 2'-position (see tables VI and VII). These compounds are novelty destroying for claim 10 in which R7 is an alkenoic acid residue which may be alpha-substituted by hydroxy.

Claims 9 and 10 therefore do not meet the Novelty requirements of Article 33(2) PCT.

The novel structural feature of the compounds of claim 1 is the presence of the alkenyl or alkynyl containing group R7 on the phenyl ring not bound to the heterarylcarbonylamino group. The dependent claims 2-8, as well as claims 11 and 12 drawn to pesticidal compositions containing compounds of claim 1 and methods of pest control using compounds of claim 1 are novel by consequence.

Claims 1 to 8 and 11-12 therefore meet the Novelty requirements of Article 33(2) PCT.

The presently claimed novel compounds appear to be structurally close to the fungicidal compounds of document (A), because many of these compounds do have alkene substituents on the biphenyl ring, but on the same phenyl ring as the heterocyclylcarbonylamino group (see tables). Document (K) also discloses some n-(biphenyl)-heteroarylcarboxamides as microbicides, but the biphenyl groups are substituted by oxime groups, and the compounds are less structurally close than the compounds of (A). Due to this close structural relationship, the skilled man would expect that the presently claimed compounds would also have fungicidal activity. Consequently, inventive step (Article 33(3) PCT) cannot be recognised because the problem of providing further fungicides appears to have been solved in an obvious manner. Inventive step for the presently claimed compounds could be recognised if the Applicant could demonstrate an unexpected effect in comparison with the closest prior art compounds as described above. However, no data showing such an effect has been given in the description.

Claim 10 relies on reference of the description. The relevant formula and table should be incorporated in the claim.

At present no priority document is available. The examination has been carried out

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assuming that the priority date is validly claimed. If during the subsequent procedure (e.g. EPO examination) the priority date is found to be invalid for some or all of the presently claimed subject matter, the intermediate documents (L)-(O) may be taken into consideration for the evaluation of Novelty and/or inventive step.